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EXAMINER

SALAD, ABDULLAHI ELMI

ART UNIT

PAPER NUMBER

2157

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/047,195

Applicant(s)

ROBINSON ET AL.

Examiner

Salad E. Abdullahi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/05/2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 11-25, 27-30, 32-33, 35-56, 58-61, 62-64, 66 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (US 6, 917, 594) in view of Tong et al., U.S. Patent Application Publication No. 2001/0034209 [hereinafter Tong].

As per Claim 1 Feuerstraeter teaches a method for transmitting entity of a plurality of entities within a network to establish a data transmission within the network, the method comprises: (See Fig. 1: col. 6, line 5-col. 7, line 15.);
determining identity of a target entity of the plurality entities; (See 6, lines 5-20: see also col. 10, lines 14-15);

determining transmission characteristics between the transmitting entity and the target entity; (See col. 6, lines 11-15: see also col. 10, lines 14-15);

determining a transmission convention based on the transmission characteristics (See col. 6, lines 11-15: see also col. 10, lines 14-15); and

providing the transmission convention to the target entity; and (See col. 6. lines 35-45: see also 10, lines 14-15);

wherein the transmission convention is selected in response to the determined transmission characteristics of a transmission path between the transmitting entity and the target entity prior to the data transmission. (See col. 8, lines 9-16).

Feuerstraeter is silent regarding: combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission.

Tong discloses a system for combining in variable rate data packet , including combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission (see paragraph 0044 and 0047-0048). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Tong into the system of Feuerstraeter thus enabling to minimize an amount of data transmitted in the data transmission in order to better utilize available bandwidth.

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As per Claims 2 and 38:

Feuerstraeter teaches the method of claim 1 and transmitting entity of 37 further comprises:

awaiting an acknowledgement of receipt of the transmission convention from the target entity; (See col. 9, lines 17-21.)

when the acknowledgement is received within a predetermined time frame, processing data based on the transmission convention to produce transmit data; and transmitting the transmit data to the target entity in accordance with the transmission convention; and (See col. 9, lines 17-21.)

wherein the transmission convention is selected in response to the determined transmission characteristics of a transmission path between the transmitting entity and the target entity prior to the data transmission. (See col. 8, lines 9-16). (A transmission convention is nothing more than a protocol - transmission characteristics are determined based on errors - a transmission path is nothing more than a communication link.)

As per Claim 3:

Feuerstraeter teaches the method of claim 2 further comprises:

when the acknowledgement is not received within the predetermined time frame, resending the transmission convention to the target entity until the acknowledgement received within the predetermined time frame or a retry sequence has been exhausted. (See col. 9, lines 17-21.)

As per Claim 4:

Feuerstraeter teaches the method claim 2 further comprises at least one of: awaiting an acknowledgement of receipt of the transmit data; and (See col. 9, lines 27-44.) receiving an error message from the target entity that the transmit data was not accurately received. (See col. 9, lines 27-44.)

Claims 5 and 39: Feuerstraeter teaches the method claim 1 and the transmitting entity of claim 37 as discussed above, wherein the determining the identity of the target entity further comprises: receiving a data packet that includes a destination address, wherein the destination address identifies the target entity. (See col. 7, lines 10-15: see also col. 10, claim 1).

As per Claims 6 and 40

Feuerstraeter teaches the method of claim 1, wherein the determining the identity of the target entity further comprises: generating a data packet that includes a destination address, wherein the destination address identifies the target entity. (See col. 7, lines 10-15: see also col. 10, claim 1).

As per Claims 7 and 41:

Feuerstraeter teaches the method of claim 1 and the transmitting entity of claim 37 as discussed above, wherein the determining the transmission characteristics further comprises, for a given data transmission from the transmitting entity to the target entity,

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at least one of: determining transmission resources available between the transmitting and target entities produce available transmission resources; (See col. 6, line 5-col. 7, line 15: see also col. 10, claim 1) determining desired data rate of the given data transmission; (See col. 6, line 5-col. 7, line 15; see also col. 10, claim 3) determining transmission distance between the transmitting entity and the target entity; ((See col. 6, line 5-col. 7, line 15; see also col. 10, claim 3) determining encoding capabilities of the transmitting entity and of the target entity; ((See col. 6, line 5-col. 7, line 15; see also col. 10, claim 1) determining whether the target entity is a termination node or an intermediate node for the given data transmission; and (See col. 7, lines 9-15.) determining characteristics of the available transmission resources. (See col. 6, lines 60-67.) .

As per Claims 8 and 42:

Feuerstraeter teaches the method of claim 7 and the transmitting entity of claim 37 as discussed above, wherein the determining the transmission convention further comprises at least one: determining encoding scheme for the given data transmission; (See col. 6, lines 30-60` see also col. 10, claim 1) determining a modulation scheme for the given data transmission; (See col. 6, lines 30-60: see also col. 10, claim 1) determining a number of the available transmission resources to support the given data transmission; (See col. 6, line 5-col. 7, line 15; See also col. 10, claim 1) adjusting the data rate of the given data transmission; and (See col. 6. line 5-col. 7, line 15: See also

col. 10, claim 3) selecting a particular type of path for supporting the given data transmission. (See col. 6, line 5-col. 7, line 15; See also col. 10, claim 8).

As per Claim 11:

The method of claim 8, wherein the determining the number of the available transmission resources to support the given data transmission further comprises: determining whether the given data transmission will be a serial transmission or a parallel transmission based, at least in part, on the data rate of the given data transmission, the transmission distance between the transmitting entity and the target entity, and the particular type of path for supporting the given data transmission. (See col. 6, line 5-col. 7, line 15: See also col. 10, claim 3).

As per Claims 12 and 43:

Feuerstraeter teaches the method of claim 1 and the transmitting entity of claim 37 as discussed above, wherein the determining the transmission characteristics further comprises, for a given data transmission: accessing a look-up table to obtain at least one of: transmission resources available between the transmitting and target entities to produce available transmission resources, desired data rate of the given data transmission, transmission distance between the transmitting entity and the target entity, encoding capabilities of the transmitting entity and of the target entity, and characteristics of the available transmission resources. (See col. 7, lines 9-55)

As per Claims 13 and 44

Feuerstraeter teaches the method of claim 1 and the transmitting entity of claim 37 as discussed above, wherein the determining the transmission convention further comprises, for a given data transmission: accessing a look-up table to obtain at least one of: encoding scheme for the given data transmission, (See col. 6, lines 60-67.) modulation scheme for the given data transmission, number of the available transmission resources to support the given data transmission, desired data rate of the given data transmission, and particular type of path for supporting the given data transmission. (See col. 7, lines 9-55)

As per Claims 14 and 45

Feuerstraeter teaches the method of claim 1 and the transmitting entity of claim 37 as discussed above, wherein the providing the transmission convention further comprises at least one of: encoding the transmission convention utilizing a default encoding scheme to produce encoding transmission convention; (See col. 7, lines 9-55) setting a field within overhead portion of data packet to indicate the transmission convention; and (See col. 7, lines 9-55) transmitting a unique message via a set-up bus indicating the transmission convention. (See col. 7, lines 9-55)

As per Claim 15:

Feuerstraeter teaches a method for establishing a data transmission within a network that includes a plurality of entities, the method comprises: (See Fig. 1) identifying a

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pending data transmission between a transmitting entity of the plurality of entities and a target entity of the plurality of entities; (See col. 6, line 5- col. 7, line 15: See also col. 10, lines 14-15)

determining transmission characteristics between the transmitting entity and the target entity; (See col. 6, line 5-15; See also col. 10, claim 1)

determining a transmission convention based on the transmission characteristics; and (See col. 6, line 5-15; See also col. 10, claim 1)

providing the transmission convention to the transmitting entity and the target entity; and (See col. 6, line 35-45: See also col. 10, claim 1).

wherein the transmission convention is selected in response to the determined transmission characteristics of a transmission path between the transmitting entity and the target entity prior to the data transmission. (See col. 8, lines 9-16).

Feuerstraeter is silent regarding: combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission.

Tong discloses a system for combining in variable rate data packet , including combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission (see paragraph 0044 and 0047-0048). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Tong into the system of

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Feuerstraeter thus enabling to minimize an amount of data transmitted in the data transmission in order to better utilize available bandwidth.

As per Claims 16 and 47:

Feuerstraeter teaches the method claim 15 and the apparatus of claim 46 as discussed above, wherein the identifying a pending data transmission further comprises: receiving an indication from the transmitting entity. (See col. 6, line 5-col. 7, line 15; See also col. 10, claim 1)

As per Claims 17 and 48:

Feuerstraeter teaches the method of claim 15 and the apparatus of claim 46 as discussed above, wherein the identifying a pending data transmission further comprises: receiving a data packet relating to the data transmission from a source external to the network; ((See col. 6, line 5-col. 7, line 15; See also col. 10, claim 1) interpreting the data packet to identify the transmitting entity for initial receipt of the data packet within the network; and (See col. 6, lines 11-59.) receiving an indication from the transmitting entity of the data transmission with the target entity. (See col. 6, lines 11-59.)

As per Claims 18 and 49:

Feuerstraeter teaches the method of claim 15 and the apparatus of claim 46 as discussed above, wherein the determining the transmission characteristics further

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comprises at least one of: determining transmission resources available between the transmitting and target entities to produce available transmission resources; ((See col. 6, line 5-col. 7, line 15: See also col. 10, claim 1) determining desired data rate of the given data transmission; ((See col. 6, line 5col. 7. line 15; See also col. 10, claim 3) determining transmission distance between the transmitting entity and the target entity; ((See col. 6, line 5-col. 7, line 15; See also col. 10, claim 3) determining encoding capabilities of the transmitting entity and of the target entity; ((See col. 6, line 5-col. 7, line 15: See also col. 10, claim 1) determining whether the target entity is a termination node or an intermediate node for the given data transmission; and ((See col. 6, line 5-col. 7, line 15: See also col. 10, claim 1) determining characteristics of the available transmission resources. (See col. 6, lines 60-67).

As per Claims 19 and 50:

Feuerstraeter teaches the method of claim 18 and the apparatus of claim 49 as discussed above, wherein the determining the transmission convention further comprises at least one of:

determining encoding scheme for the data transmission; (See col. 7, lines 9-55)
determining a modulation scheme for the data transmission; (See col. 7, lines 955)
determining a number of the available transmission resources to support the data transmission; (See col. 6, line 5-col. 7, line 15: See also col. 10, claim 1)

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adjusting the data rate of the data transmission; and ((See col. 6, line 5-col. 7, line 15; See also col. 10, claim 3)

selecting a particular type of path for supporting the data transmission. ((See col. 6 line 5-col. 7, line 15; See also col. 10, claim 8).

As per Claims 20 and 51.

Feuerstraeter teaches the method of claim 15 and apparatus of claim 46 as discussed above, wherein the determining the transmission characteristics further comprises:

accessing a look-up table to obtain at least one of:

transmission resources available between the transmitting and target entities to produce available transmission resources, (See col. 7, lines 9-55) desired data rate of the given data transmission, ((See col. 6, line 5-col. 7, line 15; See also col, 10, claim 3)

transmission distance between the transmitting entity and the target entity, encoding capabilities of the transmitting entity and of the target entity, and ((See col. 6, line 5-col. 7, line 15; See also col. 10, claim 3) characteristics of the available transmission resources. (See col. 6, lines 5-20; See also col. 10, lines 14-15).

As per Claims 21 and 52:

Feuerstraeter teaches the method of claim 15 and apparatus of claim 46 as discussed above, wherein the determining the transmission convention further comprises:

accessing a look-up table to obtain at least one of: encoding scheme for the given data transmission, (See col. 6, lines 60-67.) modulation scheme for the given data

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transmission, (See col. 6, lines 30-60, see also claim 1) number of the available transmission resources to support the given data transmission, (See col. 7, lines 9-55) desired data rate of the given data transmission, and (See col. 6, line 5-col. 7, line 15: See also col. 10, claim 3) particular type of path for supporting the given data transmission. (See col. 6, line 5-col. 7, line 15; See also col. 10, claim 8).

As per Claims 22 and 53:

Feuerstraeter teaches the method of claim 15 and apparatus of claim 46 as discussed above, wherein the providing the transmission convention further comprises at least one of: encoding the transmission convention utilizing a default encoding scheme to produce encoding transmission convention; (See col. 7, lines 9-55) transmitting a unique message via a set-up bus indicating the transmission convention. (See col. 7, lines 9-55)..

4. Claims 23-32 and 54--63 rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter in view of Huang U.S. Patent No. 6,266,345[hereinafter Huang]

As per Claim 23.

Feuerstraeter teaches a method for transmitting entity of a plurality of entities within a network to establish a data transmission within the network, the method comprises: identifying a target entity of the plurality of entities regarding the data transmission; (See

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col. 6, lines 5-20; See also col. 10, claim 1) determining bandwidth of the data transmission; (See col. 6, lines 11-15, See also col. 10, claim 3) determining number of transmissions resources based on the bandwidth of the data transmission and a transmission convention; and (See col. 6, lines 5-col. 7, line 15: See also col. 10, claim 1) accessing the number of transmission resources to transmit data to the target entity. (See col. 7. lines 9-55).

Feuerstraeter is silent regarding: optionally allocating the data transmission across a plurality of data paths, each at a path transmitting data at a bandwidth that is proportional to a ratio of the bandwidth of the data transmission to the determined number of transmission resources.

Huang disclose a method for dynamically allocating of bandwidth to virtual channels including optionally allocating the data transmission across a plurality of data paths, each at a path transmitting data at a bandwidth that is proportional to a ratio of the bandwidth of the data transmission to the determined number of transmission resources (see fig. 3 and col. 7, line 52 to col. 8, lines 22). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Huang in to the system of Feuerstraeter in order to utilize the available paths efficiently.

As per Claims 24 and 29.

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Feuerstraeter teaches the method of claim 23 and the method of claim 28 respectively as discussed above, wherein the determining the bandwidth of the data transmission further comprises at least one of: identifying transmission bandwidth capabilities of the transmitting entity; and (See col. 6, lines 11-15; See also col. 10, claim 3.) identifying reception bandwidth capabilities of the target entity. (See col. 6, line 5 col. 7, line 15; See also col. 10, claim 3.)

As per Claims 25 and 30.

Feuerstraeter teaches the method of claim 23 and the method of claim 28 respectively as discussed above, wherein the determining the number of transmission resources further comprises at least one of: identifying the transmission convention as an individual transmission convention for data transmissions from the transmitting entity; (See col. 7, lines 16-37 and col. 10, claim 1.) identifying the transmission convention as a standard transmission convention for the network; and (See col. 7, lines 16-37 and col. 10, claim 1.) identifying the transmission convention uniquely for the data transmission. (See col. 10, claim 8.)

As per Claims 27 and 32. Feuerstraeter teaches the method of claim 23 and the method of claim 28 respectively as discussed above, wherein the determining the number of transmission resources further comprises:
determining characteristics of the transmission resources between the transmitting entity and the target entity; and (See col. 6, lines 5-20 See also col. 10, lines 14-15)

optimizing the transmission convention based on the characteristics of the transmission resources. (See col. 6 line 5-col. 7, line 15 ; See also col. 10, claims 2, 7 and 8.).

As per Claim 28.

Feuerstraeter teaches a method for establishing a data transmission within a network that includes a plurality of entities, the method comprises:

identifying a transmitting entity and a target entity of the plurality of entities regarding the data transmission; (See col. 6, lines 5-20; See also col. 10, claim 1.)

determining bandwidth of the data transmission; (See col. 6, lines 11-15; See col. 10, claim 3.)

determining number of transmissions resources based on the bandwidth of the data transmission and a transmission convention; and (See col. 6, line 5-col. 7, line 15: See also col. 10, claim 1)

accessing the number of transmission resources to transmit data to the target entity. (See col. 7, lines 9-55).

Feuerstraeter is silent regarding: optionally allocating the data transmission across a plurality of data paths, each at a path transmitting data at a bandwidth that is proportional to a ratio of the bandwidth of the data transmission to the determined number of transmission resources.

Huang disclose a method for dynamically allocating of bandwidth to virtual channels including optionally allocating the data transmission across a plurality of data paths,

each at a path transmitting data at a bandwidth that is proportional to a ratio of the bandwidth of the data transmission to the determined number of transmission resources (see fig. 3 and col. 7, line 52 to col. 8, lines 22). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Huang in to the system of Feuerstraeter in order to utilize the available paths efficiently.

As per Claim 29.

Feuerstraeter teaches the method of claim 28 respectively as discussed above, wherein the determining the bandwidth of the data transmission further comprises at least one of: identifying transmission bandwidth capabilities of the transmitting entity; and (See col. 6, lines 11-15; See also col. 10, claim 3.) identifying reception bandwidth capabilities of the target entity. (See col. 6, line 5 col. 7, line 15; See also col. 10, claim 3.)

As per Claim 33:

Feuerstraeter teaches a method for establishing data transmission within a network that includes a plurality of entities, the method comprises:
establishing configuration communication between a transmitting entity and a target entity of the plurality of entities; (See col. 6, line 5-col. 7, line 15 : See also col. 10, claims 7 and 8.)

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determining transmission characteristics between the transmitting entity and the target entity; (See col. 6, lines 11-15; See also col. 10, claim 1)

determining at least one transmission convention based on the transmission characteristics; and (See col. 6, line 5-col. 7, line 15; See also 10, claims 1, 7 and 8.)

maintaining the at least one transmission convention by the transmitting and target entities; and (See col. 6, line 5-col. 7, line 15: See also col. 10, lines 1-67.)

wherein the transmission convention is selected in response to the determined transmission characteristics of a transmission path between the transmitting entity and the target entity prior to the data transmission. (See col. 8, lines 9-16). (A transmission convention is nothing more than a protocol - transmission characteristics are determined based on errors - a transmission path is nothing more than a communication link).

Feuerstraeter is silent regarding: combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission.

Tong discloses a system for combining in variable rate data packet , including combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission (see paragraph 0044 and 0047-0048). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Tong into the system of

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Feuerstraeter thus enabling to minimize an amount of data transmitted in the data transmission in order to better utilize available bandwidth.

As per Claims 35 and 66.

Feuerstraeter teaches the method of claim 33 and the apparatus of claim 64

respectively as discussed above, further comprises:

deriving a table of transmission conventions based on at least one of: the varying bandwidths, characteristics of each connection, the various encoding schemes, and the various modulation schemes. (See col. 6, line 5-col. 7, line 15; See also col. 10, claims 1 and 3.)

As per Claims 36 and 67.

Feuerstraeter teaches the method of claim 35 and the apparatus of claim 64

respectively as discussed above, wherein the determining the at least one transmission convention further comprises: selecting the at least one transmission convention based on at least one of: available connections between the transmitting entity and the target entity, bandwidth of data, and characteristics of the available connections. (See col. 6, line 5-col. 7, line 15; See col. 10, claims 1 and 3.)

As per Claim 37

Feuerstraeter teaches a transmitting entity within a network comprises: processing module; and memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to establish a data transmission within the network by: (See Fig. 1) determining identity of a target entity of the plurality of entities; (See col. 6, lines 11-15; see also col. 10, claim 1) determining transmission characteristics between the transmitting entity and the target entity; (See col. 6, lines 11-15; see also col. 10, claim 1) determining a transmission convention based on the transmission characteristics; and (See col. 6, lines 11-15; see also col. 10, claim 1) providing the transmission convention to the target entity; and (See col. 6, lines 11-15; see also col. 10, claim 1) (See col. 10, lines 1-5.)

wherein the transmission convention is selected in response to the determined transmission characteristics of a transmission path between the transmitting entity and the target entity prior to the data transmission. (See col. 8, lines 9-16). (A transmission convention is nothing more than a protocol - transmission characteristics are determined based on errors - a transmission path is nothing more than a communication link.).

Feuerstraeter is silent regarding: combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission.

Tong discloses a system for combining in variable rate data packet, including combining data from two or more portions of a data packet into a single portion, the

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single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission (see paragraph 0044 and 0047-0048). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Tong into the system of Feuerstraeter thus enabling to minimize an amount of data transmitted in the data transmission in order to better utilize available bandwidth.

As per Claim 46

Feuerstraeter teaches an apparatus for establishing a data transmission within a network that includes a plurality of entities, the apparatus comprises: (See Fig. 1; col. 6, line 5-col. 7, line 15.) processing module; and (See Fig. 1) memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to: (See Fig. 1 -inherently included in any of (20) ,(22), (24), (26) or (28). Identify a pending data transmission between a transmitting entity of the plurality of entities and a target entity of the plurality of entities; (See col. 6, lines 11-55; see also col. 10, claim 1) determine a transmission characteristics between the transmitting entity and the target entity; (See col. 6, lines 11-15; see also col. 10, lines 14-15) determine a transmission convention based on the transmission characteristics; and (See col. 6, lines 11-15; see also col. 10, lines 14-15) provide the transmission convention to the transmitting entity and the target entity; and (See col. 6, lines 35-45; see also 10, lines 14-15) wherein the transmission convention is selected in response to the determined transmission characteristics of a

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transmission path between the transmitting entity and the target entity) prior to the data transmission. (See col. 8, lines 9-16).

Feuerstraeter is silent regarding: combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission.

Tong discloses a system for combining in variable rate data packet, including combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission (see paragraph 0044 and 0047-0048). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Tong into the system of Feuerstraeter thus enabling to minimize an amount of data transmitted in the data transmission in order to better utilize available bandwidth.

As per Claim 54

Feuerstraeter teaches a transmitting entity within a network comprises: processing module; and (See Fig.1) memory operable coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to establish a data transmission within the network by: (See Fig. 1) identifying a target entity of the plurality of entities regarding the data transmission; (See col. 6, lines 11-15', see also col. 10, claim 1) determining bandwidth of the data transmission; (See col. 6,

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lines 11-15L see also col. 10, claim 3) determining number of transmissions resources based on the bandwidth of the data transmission and a transmission convention; and (See col. 6, line 5-col. 7, line 15; See also col. 10, claim 1) accessing the number of transmission resources to transmit data to the target entity. (See col. 7, lines 9-55) Feuerstraeter is silent regarding: optionally allocating the data transmission across a plurality of data paths, each at a path transmitting data at a bandwidth that is proportional to a ratio of the bandwidth of the data transmission to the determined number of transmission resources.

Huang disclose a method for dynamically allocating of bandwidth to virtual channels including optionally allocating the data transmission across a plurality of data paths, each at a path transmitting data at a bandwidth that is proportional to a ratio of the bandwidth of the data transmission to the determined number of transmission resources (see fig. 3 and col. 7, line 52 to col. 8, lines 22). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Huang in to the system of Feuerstraeter in order to utilize the available paths efficiently.

As per Claims 55 and 60:

Feuerstraeter teaches the transmitting entity of claim 54 and the apparatus of claim 59 respectively as discussed above, wherein the memory further comprises operational instructions that cause the processing module to determine the bandwidth of the data transmission by at least one of: (See Fig. 1)

identifying transmission bandwidth capabilities of the transmitting entity; and (See col. 6, lines 11-15: see also col. 10, claim 3)

identifying reception bandwidth capabilities of the target entity. (See col. 6, lines 5-20; see also col. 10, claim 3).

As per Claims 56 and 61:

Feuerstraeter teaches the transmitting entity of claim 54 and the apparatus of claim 59 respectively as discussed above, wherein the memory further comprises operational instructions that cause the processing module to determine the number of transmission resources by at least one of:

identifying the transmission convention as an individual transmission convention for data transmissions from the transmitting entity; (See col. 6. line 5-col. 7. line 15: see also col. 10, claim 1)

identifying the transmission convention as a standard transmission convention for the network; and (See col. 10, claim 1)

identifying the transmission convention uniquely for the data transmission. (See col. 6, line 5 col. 7, line 15; See also col. 10, claim 8.)

As per Claims 58 and 63:

Feuerstraeter teaches the transmitting entity of claim 54 and the apparatus of claim 59 respectively as discussed above, wherein the memory further comprises operational

instructions that cause the processing module to determine the number of transmission resources by: (See Fig. 1)

determining characteristics of the transmission resources between the transmitting entity and the target entity; and (See col. bylines 11-15: see also col. 10, claim 1)

optimizing the transmission convention based on the characteristics of the transmission resources. (See col. 6, line 5-col. 7, line 15, see also 10, claim 2, 7 and 8.)

As per Claims 59 and 64

Feuerstraeter teaches an apparatus for establishing a data transmission within a network that includes a plurality of entities, the apparatus comprises: (See Fig. 1: col. 6, line 5-col. 7, line 15.)

processing module; and (See Fig. 1)

memory operably coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to: (See Fig. 1 -inherently included in any of (20),(22), (24), (26) or (28).

establish configuration communication between a transmitting entity and a target entity of the plurality of entities; (See col. 6, lines 11-55: see also col. 10, , claim 1)

determine transmission characteristics between the transmitting entity and the target entity; (See col. 6. lines 11-15; see also col. 10, lines 14-15)

determine at least one transmission convention based on the transmission characteristics; and (See col. 6, lines 11-15: see also col. 10, lines 14-15) maintain the at least one transmission convention by the transmitting and target entities; and (See col. 6, lines 35-45; see also 10, lines 14-15) wherein the transmission convention is

selected in response to the determined transmission characteristics of a transmission path between the transmitting entity and the target entity prior to the data transmission. (See col. 8, lines 9-16).

5. Claim 37 is further rejected under 35 U.S.C. §102(e) as being anticipated by Sridhar(US 6,266,701) in view of Tong

Sridhar also teaches the invention as claimed including a communication system for improving communication over a data network between an application and remote systems where each of the remote systems is configured to communicate using at least one of multiple transport layer communication protocols. (See abstract)

As per Claim 37 Sridhar teaches a transmitting entity within a network comprises: processing module; and memory operable coupled to the processing module, wherein the memory includes operational instructions that cause the processing module to establish a data transmission within the network by: (See col. 10, lines 21-36.) determining identity of a target entity of the plurality of entities; (See col. 11, lines 5-60; see also col. 24, claims 1 and 11) determining transmission characteristics between the transmitting entity and the target entity; (See Figs. 10, 11; col. 8, line 1-col. 9, line 60: see also col. 24, claim 1) determining a transmission convention based on the transmission characteristics; and (See Figs. 10, 11: col. 8, line 1-col. 9, line 60; see also col. 24, claim 1) providing the transmission convention to the target entity; and (See

Figs. 10, 11; col. 8, line 1-col. 9, line 60; see also col. 24, claim 5) wherein the transmission convention is selected in response to the determined transmission characteristics of a transmission path between the transmitting entity and the target entice prior to the data transmission. (See col. 23, lines 26-30 and 55-64).

Sridhar is silent regarding: combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission.

Tong discloses a system for combining in variable rate data packet , including combining data from two or more portions of a data packet into a single portion, the single portion containing less data than the two or more portions combined to reduce an amount of data transmitted in the data transmission (see paragraph 0044 and 0047-0048). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teachings of Tong into the system of Sridhar thus enabling to minimize an amount of data transmitted in the data transmission in order to better utilize available bandwidth.

6. Claims 9, 10, 26, 31 and 57, 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter in view of Computer Networks by Andrew S. Tanenbaum (only used as evidence for Official Notice.)

As per Claim 9:

The method of claim 8, wherein the determining the encoding scheme comprises at least one of: determining multilevel encoding for the given data transmission; determining non return to zero (NRZ) encoding for the given data transmission; determining Manchester encoding for the given data transmission; determining block encoding for the given data transmission; and determining nBImB encoding for the given data transmission, where $n < m$. As for above claim, "Official Notice" is taken that the use of the different encoding mechanisms as disclosed by Andrew S. Tanenbaum is well known and expected in the art. It would have been obvious to use the encoding schemes disclosed by Tanenbaum since it is a well known process in the art. Claim 10:

The method of claim 8, wherein the determining the modulation scheme further comprises at least one of: determining pulse position modulation (PPM) for the given data transmission; determining time division multiplexing (TDM) for the given data transmission; determining frequency division multiplexing (FDM) for the given data transmission; determining pulse amplitude modulation (PAM) for the given data transmission; determining amplitude shift keying (ASK) for the given data transmission; determining frequency shift keying (FSK) for the given data transmission; determining phase shift keying (PSK) for the given data transmission; determining quadrature phase shift keying (QPSK) for the given data transmission; and determining carrier sense multiple access for the given data transmission.

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As for above claim, "Official Notice" is taken that the use of the different encoding mechanisms as disclosed by Andrew S. Tanenbaum is well known and expected in the art. It would have been obvious to use the encoding schemes disclosed by Tanenbaum since it is a well known process in the art.

Claims 26 and 31.

Feuerstraeter teaches the method of claim 23 and the method of claim 28 respectively as discussed above, wherein the accessing the number of transmission resources further comprises at least one of:

utilizing carrier sensed multi access protocol to access each of the transmission resources; receiving access to the transmission resources in response to receiving a token; and receiving access to the transmission resources accordance with division multiplexing.

As for above claims, "Official Notice" is taken that the use of the different protocols such as CSMA as disclosed by Andrew S. Tanenbaum is well known and expected in the art. It would have been obvious to use the CSMA as a protocol disclosed by Tanenbaum since it is a well known process in the art.

Claims 57 and 62:

Feuerstraeter teaches the transmitting entity of claim 54 and the apparatus of claim 59 respectively as discussed above, wherein the memory further comprises operational

instructions that cause the processing module to access the number of transmission resources by at least one of:

utilizing carrier sensed multi access protocol to access each of the transmission resources; receiving access to the transmission resources in response to receiving a token; and receiving access to the transmission resources in accordance with division multiplexing.

As for above claims, "Official Notice" is taken that the use of the different protocols such as CSMA as disclosed by Andrew S. Tanenbaum is well known and expected in the art. It would have been obvious to use the CSMA as a protocol disclosed by Tanenbaum since it is a well known process in the art.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 34 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter in view of Scoville et al. (US 6,618,360.)

Feuerstraeter teaches the invention as claimed including a network device which automatically detects the best protocol a network will support. The network device further includes negotiation logic coupled to the driver and receiver for selecting a protocol in coordination with other network devices. (See abstract)

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As per Claims 34 and 65.

Feuerstraeter substantially teaches the method of claim 33 and the apparatus of claim 64 respectively as discussed above.

Feuerstraeter does not teach "wherein the establishing configuration communication further comprises at least one of:

transmitting test data from the transmitting entity to the target entity at varying bandwidths;

transmitting test data over each connection between the transmitting entity and the target entity;

transmitting test data from the transmitting entity to the target entity using various encoding schemes; and

transmitting test data from the transmitting entity to the target entity using various modulation schemes."

Scoville discloses such limitation (see col. 4, lines 5-15 and col. 8, lines 34-48). Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the use of the automatic protocol selection disclosed by

Feuerstraeter with the method for testing data path of peripheral server devices as taught by Scoville, this would enable designers to more easily and efficiently make internal design changes that will improve the overall performance of their products.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salad E. Abdullahi whose telephone number is 571-272-4009. The examiner can normally be reached on 8:30 - 5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abdullahi Salad
10/25/2006

ABDULLAH SALAD
PRIMARY EXAMINER